# Floyd-Warshall Algorithm

**Time:** 5000ms

**Memory:** 25600KB

You are given a graph with $N$ vertices and $M$ edges. Implement the Floyd-Warshall Algorithm and find out the lengths of the shortest paths between all pairs of vertices.

## Input

The first line consists of $T$ which is the number of test cases.
Each test case starts with $N$ and $M$. The next $M$ lines consist of two integers $u$, $v$ and $w$, implying that, there exists a directed edge from $u$ to $v$ having an edge weight $w$.

After those $M$ lines, the next line will consist of $Q$, the number of queries. In each query, there will be two vertices, $a$ and $b$ separated by a single space.

## Output

For each query, print the length of the shortest path. If a path doesn't exist, then print $-1$.

**Sample Input:**

```
2
4 4
1 2 3
2 3 4
4 3 5
3 1 6
3
1 3
4 1
1 4
2 1
1 2 69
2
1 2
2 1
```

**Sample Output:**

```
7
11
-1
69
-1
```